Haier

SERVICE MANUAL Refrigerator FOR EXPORT 2010

1 Specifications

1-1) Specific parts for specific countries

Item No.	Model	Destination	Power Source (Voltage-ac / Hz)	Power Cord	Internal Volume (Litre) (by ISO 8561;1995)
1.	HR-933F	VENEZUELA (VE)	115 / 60	J2 (USA Style)	332

1-2) Product

Model		HR-933F
Classification		2 Doors No Frost
Temperature Control		Thermostat
Defrost System		Automatic
Drain		Automatic (Heat by transfer from the Condenser)
Evaporator		Aluminum Coil With Bond
Condenser		Pipe Condenser
Insulation	Cabinet	Rigid Polyurethane Foam (Cyclopentane)
	Freezer Door	Rigid Polyurethane Foam (Cyclopentane)
	Refrigerator Door	Rigid Polyurethane Foam (Cyclopentane)
Refrigerant		HFC-134a
Refrigerant Charge (g.)		105
Overall Dimension (WxDxH (mm.))		606 x 670 x 1,700
Packing Dimension (WxDxH (mm.))		657 x 749 x 1,813
Net Weight (kg.)		70.0
Gross Weight (kg.)		77.5

1-3) Characteristic of Thermostat

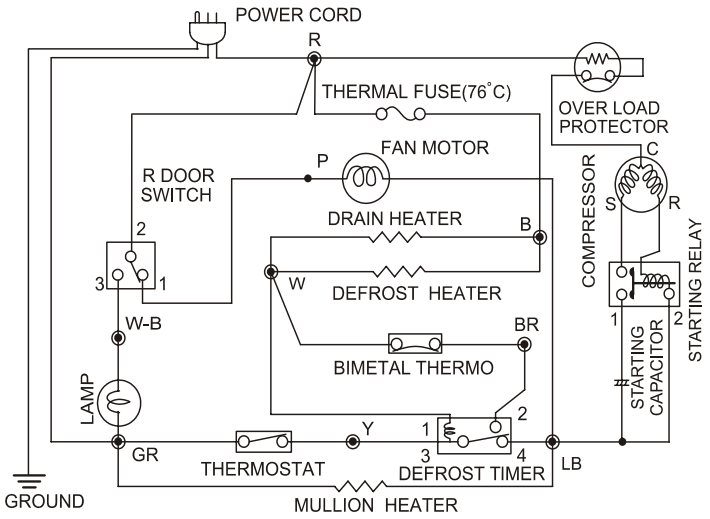
Operating Temperature (°C) 1013hPa (mb)				
Temperature Control	Model		MM1-8053	
	Dial Position		ON	OFF
	WARM	°C	-18.4	-21.7
	NORMAL	°C	-21 ± 1.5	-24.5 ± 1.5
	COLD	°C	-26.7	-30.9

1-4) Electrical Parts

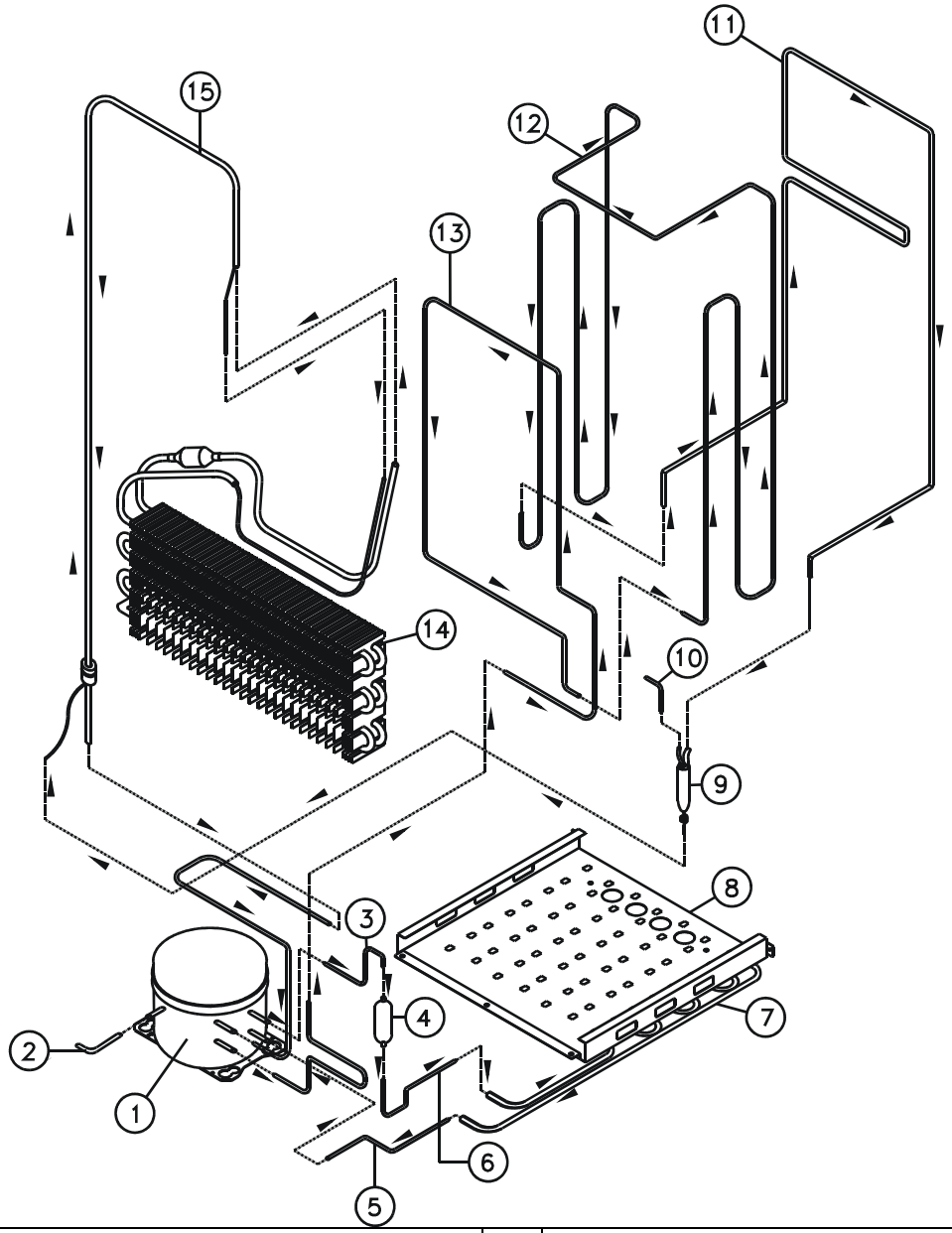
1-4-1) MODEL HR-933F

Compressor	Model	C-BZN176L2Z
	Power Supply Range	115-127V / 50-60 Hz
Starting Relay		MTRP4615
Overload Protector		4TM427RHBYY-53
Starting Capacitor		60μF / 160 VAC
Running Capacitor		-
Interior Light		240 V / 15 W

2 Wiring Diagram



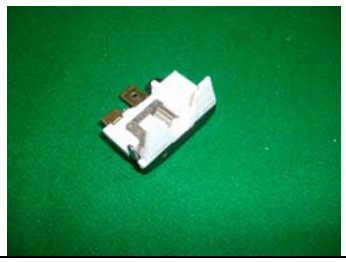
3	Refrigerant Circuit



1	COMPRESSOR	9	DRYER ASS'Y
2	TUBE CHARGE	10	TUBE DISCHARGE
3	TUBE CONNECT 139	11	TUBE FRAME
4	ACCUMULATOR / MUFFER	12	TUBE CREST
5	TUBE CONNECT 145	13	TUBE CREST S
6	TUBE CONNECT 143	14	EVAPORATOR ASS'Y
7	CONDENSER PIPE	15	SUCTION TUBE ASS'Y
8	CONDENSER PLATE		

4 Trouble Shooting

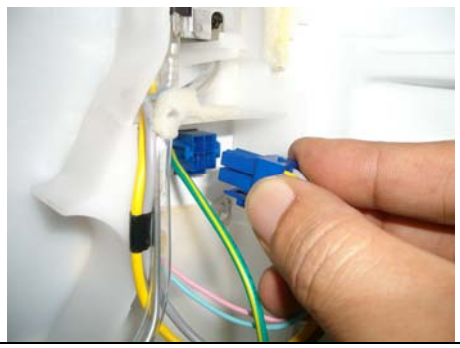
4-1) MODEL HR-933F (BANGLADESH)

<table>
<tr><th>Part Name</th><th>Picture</th><th colspan="4">Check Method and Criterion</th></tr>
<tr><td rowspan="4">Compressor</td><td rowspan="4"> </td><td colspan="4">Measure the resistance with a tester.
(Ambient temperature : Room temperature 25°C)</td></tr>
<tr><td>Model</td><td></td><td>Main Wiring</td><td>Auxiliary Wiring</td></tr>
<tr><td rowspan="2">C-BZN176 L2Z</td><td>Normal</td><td>- Ω (Approx.)</td><td>- Ω (Approx.)</td></tr>
<tr><td>Abnormal</td><td colspan="2">Open(∞ Ω) or Short Circuited (0 Ω)</td></tr>
<tr><td rowspan="4">Starting Relay</td><td rowspan="4"> </td><td colspan="4">Measure the resistance with a tester.
(Ambient temperature : Room temperature 25°C)</td></tr>
<tr><td colspan="2">Model</td><td colspan="2">MTRP4615</td></tr>
<tr><td colspan="2">Pick up current max. (A)</td><td colspan="2">3.50</td></tr>
<tr><td colspan="2">Drop out current min. (A)</td><td colspan="2">3.05</td></tr>
<tr><td rowspan="4">Overload Protector</td><td rowspan="4">  </td><td colspan="4">Measure the resistance with a tester.
(Ambient temperature : Room temperature 25°C)</td></tr>
<tr><td>Model</td><td colspan="3">4TM427RHBYY-53</td></tr>
<tr><td>Normal</td><td colspan="3">Less than 1 Ω (Approx.)</td></tr>
<tr><td>Abnormal</td><td colspan="3">Open(∞ Ω) or Short Circuited (0Ω)</td></tr>
<tr><td rowspan="4">Starting Capacitor</td><td rowspan="4"> </td><td colspan="4">Measure the resistance with a tester.
(Ambient temperature : Room temperature 25°C)</td></tr>
<tr><td>Model</td><td colspan="3">60 μF / 160 VAC</td></tr>
<tr><td>Normal</td><td colspan="3">Open(∞ Ω)</td></tr>
<tr><td>Abnormal</td><td colspan="3">Short Circuited (0Ω)</td></tr>
</table>

5 Replacement of Parts

- Unplug the power cord before servicing.

1. **Model** : HR-933F

Part Name	Operating Procedure	
Thermostat. 		
1. Remove Ice Cube Box. 	2. Remove Ice Cube Tray. 	3. Remove Freezer Corner.
4. Adjust Knob Thermo to “Min” position. 	5. Pull out Thermo. 	6. Release screws at FF.Cover.
7. Lift FF. Cover. 	8. Pull out Thermostat socket. 	9. Release Thermostat’s lock.

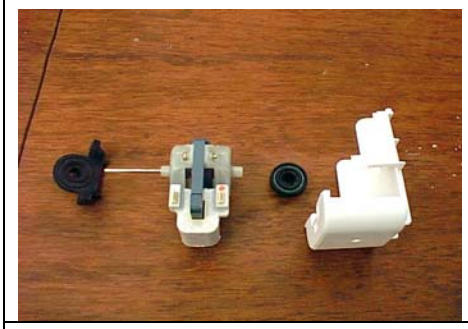
10. Pull out Thermostat from Plate MTG Motor. 	11. Pull out electrical wire from Thermostat by gripping the plug. 	12. After replacing Thermostat, reverse the steps above.

Part Name Fan 	**Operating Procedure** - Follow step 1-8 of replacing Thermostat.

1. Dig Spring. 	2. Pull out Fan from Fan Motor. 	3. After replacing Fan , reverse the steps above.

Part Name

Fan Motor.



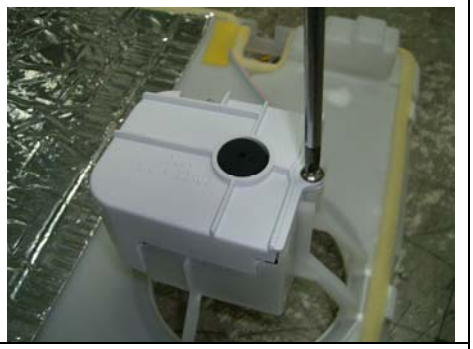
Operating Procedure

- Follow step 1-9 of replacing Thermostat.
- Follow step 1-2 of replacing Fan.

1. Press Plate MTG Motor to remove lock.

2. Lift Plate MTG Motor out.

3. Release screw at Cover A.



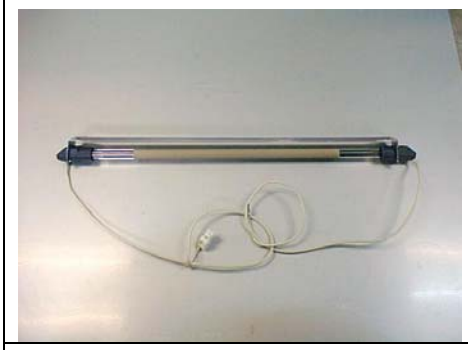
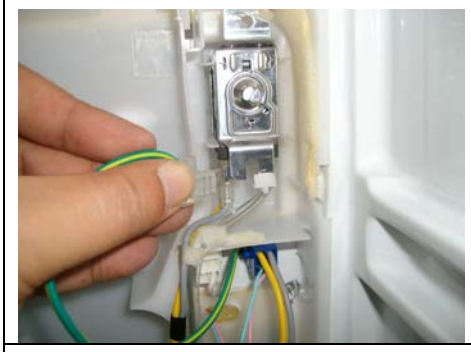
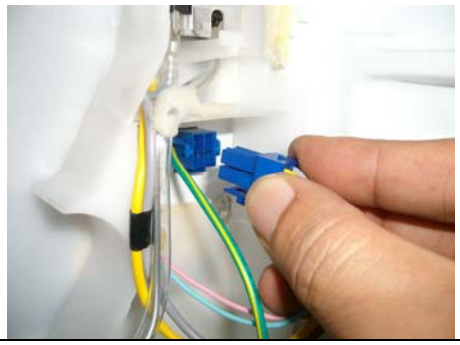
4. Pull Cover A from Plate MTG Motor.

5. Pull Fan Motor from Plate MTG Motor.

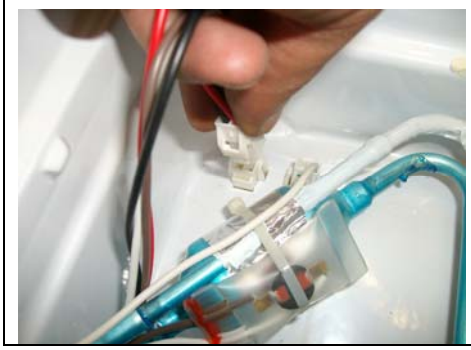
6. Hold Recept Terminal then pull out electrical wire from Fan Motor.

7. Pull Back Grommet from Fan Motor.

8. After replacing Fan Motor, reverse the steps above.

Part Name	Operating Procedure	
Glass Tube Heater. 	- Follow step 1-8 of replacing Thermostat.	
1. Hold the socket of Thermostat. 	2. Pull out Thermostat socket. 	3. Press Plate MTG Motor Ass'y to remove lock.
4. Lift Plate MTG Motor Ass'y out. 	5. Take out socket of Glass Tube Heater. 	6. Hold and lift Evaporator up.
7. Remove aluminium tape that cover electrical wire. 	8. Hold Glass Tube Heater at the rubber connector. 	9. After replacing Glass Tube Heater, reverse the steps above.

Part Name	Operating Procedure
Bimetal Thermo & Thermal Fuse	- Follow step 1-8 of replacing Fan Motor. - Follow step 1-6 of replacing Glass Tube Heater.

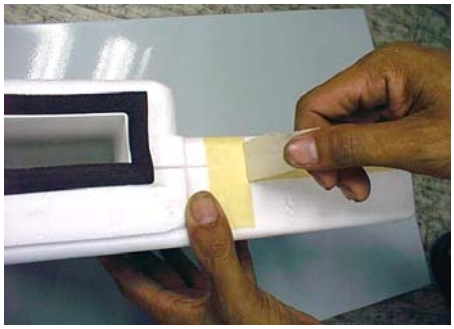
1. Take out socket of Bimetal Thermo & Thermal Fuse.	2. Cut out Cable Tie from Evaporator tube.	3. Cut out Cable Tie from Evaporator tube.
		

4. After replacing Bimetal Thermo & Thermal Fuse, reverse the steps above.

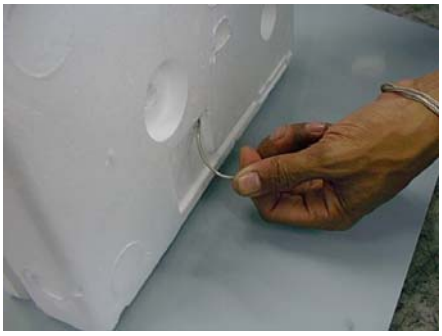
Part Name	Operating Procedure	
Damper Thermostat		
1. Pull out Tray Chiller.	2. Release Door.	3. Remove all Glass Shelf.
4. Remove Shield Light from Cover Thermostat.	5. Turn Knob Thermostat to “Min” position.	6. Pull out Knob Thermostat from Cover Thermostat.
7. Dig Cover Cap out.	8. Release screw from Cover Thermostat.	9. Lift out Cover Thermostat.

10. Separate Insulation from Cover Thermostat.

11. Remove paper tape from Insulation.



12. Straighten Damper Thermostat sensing tube.



13. Separate Insulation from each other.

14. Release screws that hold Damper Thermostat and Case Damper.

15. Pull Damper Thermostat from Case Damper.

16. After replacing Damper Thermostat, reverse the steps above.

Part Name

Lamp

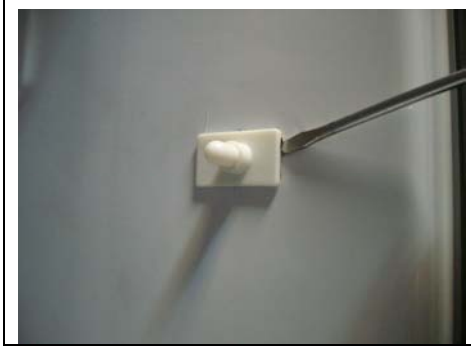
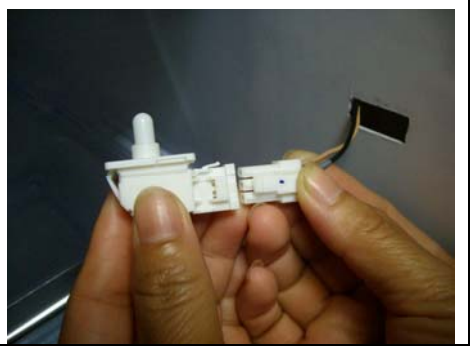
Operating Procedure

- Follow step 1-3 of replacing Damper Thermostat.

1. Remove Shield Light from Cover Thermostat.

2. Turn Lamp counterclockwise to remove.

3. After replacing Lamp, reverse the steps above.

Part Name	Operating Procedure	
Door Switch. 		
1. Dig door switch out. 	2. Pull door switch from Inner Box. 	3. Hold recept terminal. 

4. After replacing Door Switch, reverse the steps above.

Part Name

Defrost Timer.

Operating Procedure

1. Release screws that hold Electric Case.

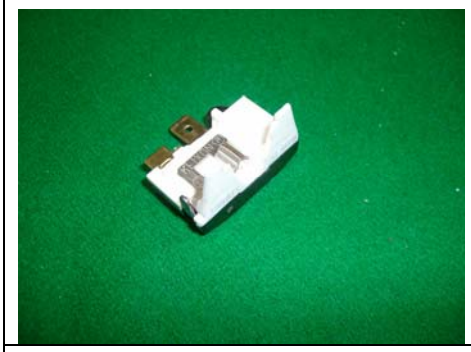
2. Open the Electric Case Cover as the picture.

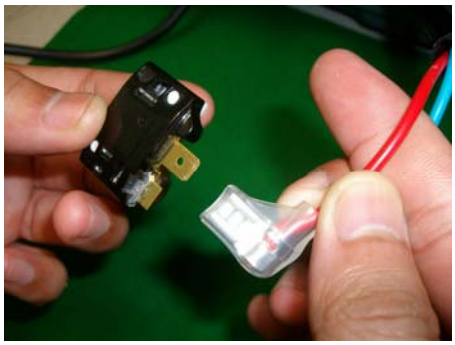
3. Release screws that hold Defrost Timer from the Electric Case Cover.

4. Hold Recept Terminal then pull out electrical wires from Defrost Timer.

5. After Replacing Defrost Timer, reverse the steps above.

Part Name	Operating Procedure	
Starting Relay. 		
1. Release Relay Cover Fixing Clip. 	2. Remove Relay Cover. 	3. Lever Starting Relay by flatton screw driver.
4. Hold Recept Terminal then pull out electrical wires from Starting Relay. 	5. After Replacing Starting Relay, reverse the steps above.	

Part Name	Operating Procedure
Overload Protector 	- Follow step 1-3 of replacing Starting Relay.

1. Remove Overload Protector.	2. Remove Overload Protector.	3. Hold Recept Terminal then pull out electrical wires from Overload Protector.
		

4. After Replacing Overload Protector, reverse the steps above.